Level Design: Resources and Techniques to Guide the Player

Bachelor's Thesis
Degree in Video Game Design and Development

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Abstract

Video Games try to immerse the player in the world they present, graphical fidelity, music, sound, and gameplay are essential parts to achieve this objective, but sometimes the User Interface(UI) gets in the way, making the player feel that they are just playing a game, that there's nothing deeper in the experience. A big part of the usual UI elements used by video games are focused on helping the player navigate through the environment, making the experience much more fluid as the player won't get lost. There are techniques and resources that can be used in level design to avoid using as much UI elements, there is a good amount of documentation about this elements, but the information is dispersed in many books, thesis, papers, and videos. This thesis presents an ordered list of the most used and effective resources, together with the analysis and playtesting of 2 levels from 2 different games. The list gives the toolkit required to build a level, the analysis verify the effectivity of some of the resources.

Glossary

UI(User Interface): The User Interface is the group of elements that provide the player with information. User interface is typically used for Health, Ammo, Stamina, Maps, Compass, Menus, etc…

Diegetic: When something is *diegetic,* it means that it exists in the fictional world of the game. Music for example, can be diegetic if the character can hear it, if the character in the game can't hear the music and it's simply playing for the player, then we will consider it non-diegetic. UI can also be diegetic.

Playtest: A playtest session is a testing session where players/testers play through a section of a game and give some sort of feedback. Playtest sessions can take many forms depending on how much information is given to the testers.

NPC(Non-Player Character): NPCs are the characters in a game that are not controlled by players. Usually we use the word NPC for characters that are friendly, or neutral to the player, aggressive NPCs will usually be considered enemies.

Lobby/Hub: A lobby or hub in a video game, is a space that is used to connect different areas, this connection can be a physical path the player can walk, or just a teleport system where the player selects where they want to go and the character will be teleported.

Open World Game: Open world games feature one single huge level which we consider the world, this world usually has different sections and not every part follows the same theme. These type of games give a lot of freedom to the player to explore and approach challenges in different ways. Non-Open world games are usually more lineal and offer a similar experience to all type of players.

Introduction

In the past years video-games have achieved a level of graphical fidelity that is very close to what we see in real life, photogrammetry allows us to create perfectly modeled and textured objects, audio systems have improved a lot to the point where we can simulate a sound coming from an exact point behind us without needing a surround system. Although some games don't try to approach photorealism, they do try to be immersive.

The concept of immersion is very subjective, but we can consider a game immersive when the player can enter a *flow* state more easily. One of the definitions for flow is the following: *"Being completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved, and you're using your skills to the utmost."* - **Mihaly Csikszentmihalyi**, *Wired, 09.01.96*

Once the players are in a flow state their experience is much more fluid and engaging, we want the player to get as soon as possible in this state, we (usually) want them to forget that they are playing a game and just want them to enjoy the experience. UI plays a very important role in this, if we have a photo realistic game but we then put a lot of UI elements around the screen it will be very difficult to get the degree of immersion we need for the flow state, this UI elements are often used as resources to help with the navigation around the environment the player is in, this resources are usually maps, minimaps, compasses, quest objective markers, etc…

On most cases this UI elements that are dedicated to navigation can be made irrelevant with a well thought level design, that uses all the available resources to get the same effect with the use of light, movement, colors and more.

The objective of this thesis is to gather as much information as possible on this resources and put them together in a way that is quickly accessible, easy to read, and visual so that everyone can apply this techniques to improve an already existing level, or to create a level from scratch with this techniques in mind. Two levels from games of the same genre have been analyzed and playtested, focusing on their use of this resources, the effect of the UI, and overall how successful they are at guiding the player. With the feedback of the playtesters and the observed results, some improvement proposals will be made, always following the original objectives of the level.

UI Role

Before introducing resources that can be used in the level we have to first see the role of the UI, it's types and how they affect immersion.

There are 2 types types of UI:

Non-Diegetic

Non-diegetic user interfaces are more common than than diegetic ones. A Non-diegetic UI element only exists for the player, and their purpose is to give information to them. In the case of non-diegetic UI elements that help with navigation we usually find elements like:

- Maps: Visual representation of the level or levels where the player is, maps usually contain detailed information about points of interest, the current position of the player in the map, and the position of the current objective of the player.

Figure 1. **This is a screenshot of a map found in Spiderman, we can see the position of the player marked with a blue arrow, and the location of various points of interest in the map. Image from *Spiderman*, by *Naughty Dog*, 2018**

- Mini-maps: Similarly to regular maps, mini-maps are also a visual representation of the level, but usually they focus on the surrounding area of the player. Mini-maps also show the location of near points of interest. Some games also double the minimap function as a compass, pointing the direction of the currently active objective.

Figure 2. **A closeup from the mini-map featured in The Witcher 3, this mini-map does not only show how the surrounding area around the player is, but it also points to the currently active objective. Image from *The Witcher 3*, by *CD PROJEKT RED*, 2015**

- Compass: Compasses may take many different forms, but their purpose is the same. They point towards the direction of the player's objective, compasses are usually integrated together with circular mini-maps.

Figure 3. **This is a screenshot of the compass featured in Horizon Zero Dawn, the compass points to the active objective, and to nearby points of interest. Image from *Horizon Zero Dawn*, by *Guerrilla Games*, 2017**

- Quest markers: Quest markers can also take many forms but they all accomplish the same objective, showing at all moments the quest objective on screen, even if the player can't directly see it. Quest markers usually contain a unit of distance to indicate the proximity to the objective.

Figure 4. **This is a screenshot of the quest marker featured in Destiny 2, the quest marker shows the exact position of the selected objective, the marker will still be visible even if there are objects in the way. Image from *Destiny 2*, by Bungie, 2017**

Diegetic

Diegetic UI is less common as it usually requires additional work and adds limitations to the design process. Diegetic UI exists inside the game world, and it's used by both the player and the player's character. This type of UI is usually justified through the narrative of the game, on Sci-fi themed games the UI is often provided by some accessory or implant that the character has installed. This kind of user interfaces don't affect immersion as much as Non-Diegetic UI, this makes it preferable in almost every game, where we are always looking to have a great level of immersion.

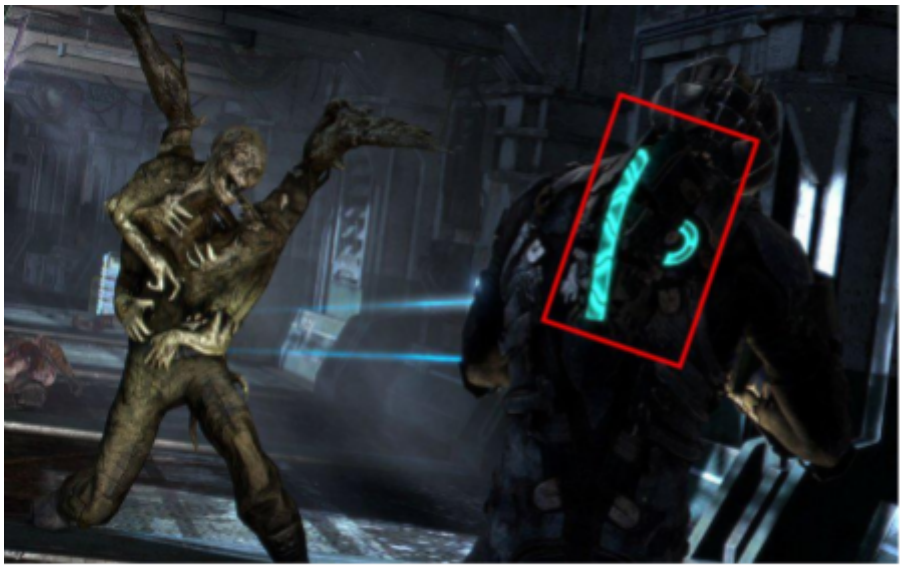

Figure 5. **This is a screenshot from the Player's UI in Dead Space, the long blue bar indicates the health of the character, while the semi circle shows the number of uses of one of the player skills. Image from *Dead Space*, by *Visceral Games*, 2008**

Resources to guide the player

The following resources can be used to guide the player through a level, depending on how they are used they will be more or less effective, on some cases they can completely replace UI elements, and on others it will help reduce this elements or support them increasing the overall level of immersion of the player.

The use and effectivity of this resources is often conditioned by contrast and overall composition, which means that in order to be most effective they have to be implemented in the level from the beginning of the process, passing through a playtesting process to iterate until the desired results are achieved.

Color

There are various ways to apply color to level design.

Color Psychology

The effects of colors on human emotions has been a topic that has been researched for a long time, it has been demonstrated that color does have an effect on emotions, the major properties that impact this emotions are Brightness and Saturation (*Effects of Color on Emotions,* by *Patricia Valdez* and *Mehrabian*, 1994), but hue also has an effect. This use of color has been used in movies and static art for a long time, it's usually used to set a mood to a scene, there are not many direct applications for guiding the player using this technique, but

if we know what's the state of the player we can use other resources more effectively. A very useful website we can use is: https://www.canva.com/colors/color-meanings/. On *Canva* we can find a huge array of colors, each of them has a description on what are good places to apply it, and more importantly, what do they make the user/player feel, by having in mind what each color transmits to the player we can improve the effectiveness of how the player affects the player

***Figure 6.* This is a basic list describing some of the characteristics that these colors evoke, the list is very basic, more detailed descriptions can be found in *Canva*. Image from *User Testing Blog "How color impacts conversion rates and UX"*, 2019**

High saturation and Low brightness: If colors with characteristics are present in our level, the player will have a higher feeling of dominance, this will increase their confidence and can help us create a fast action section where the player has to quickly react to quick impulses, jumping from enemy to enemy, platforming sections while they are fleeing from a deadly enemy, etc… This characteristics are usually associated with warm colors, but the effects are provided by the saturation and brightness level, hue doesn't have a huge effect.

Figure 7. Screenshot from the level *"The Raid on Digistruck Peak"*, this level has predominantly saturated colors with a low brightness, most of the ambient color is created from the ambient light, and the environment textures. Image from *Borderlands 2*, by *Gearbox Software*, 2012

Low saturation and High brightness: Associated with cold colors, this combination will give a sense of insecurity to the player, the feeling of dominance is very reduced, this can help to increase tension and create a feeling of unease. This can be especially useful when we want to trick a player into a trap, showing what looks like a more appealing area that contrasts with the pale looking area.

Figure 8. **On this screenshot we can see an environment that uses fog to give an overall cold appearance to the level. Screenshot from Silent Hill: Downpour, by Vatra Games, 2012**

Contrast

Another way of using color is by simple contrast. Contrast can be applied by simply applying color theory, by looking at the color wheel we can know which colors contrast with each other, we are usually going to pick a predominant color palette in our level, once we have that palette, we can look for the opposite colors and use those to make certain elements stand out from the rest. E.g: If our level is a dense forest, the predominant color will probably be green, if we take a look at a color wheel we will see that red is the opposite, which means that if we want to call the players attention we need to use red elements to do so.

Contrast can be applied in any situation, the only pre requirement is that our level needs to have a coherent color palette, this technique won't work on levels that don't have a single predominant color.

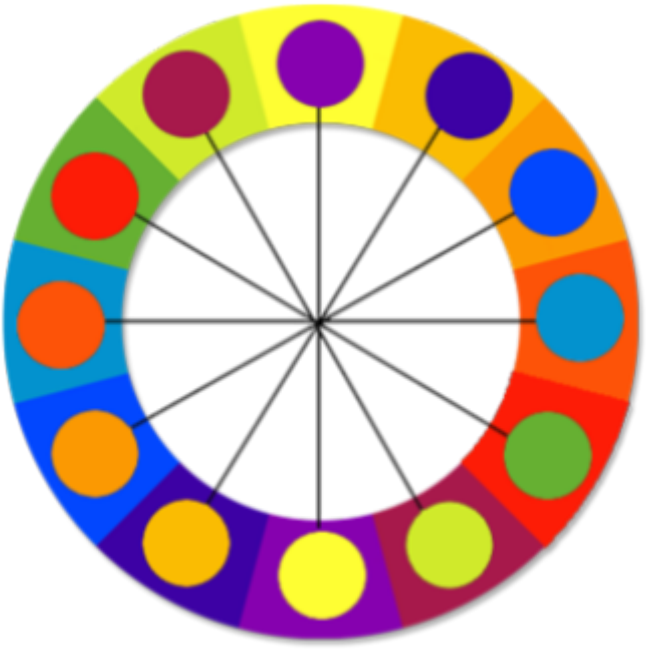

Figure 9. **Color wheel showing each color together with their complementaries. Image from Wikiversity, *Combining Colors*, 2018**

Figure 10. **The overall color of the level is a blue cold color, to call the attention of the players the developers used a bright orange for the pillars and the fire, contrasting with the rest of the colors in the level. Image from *XING: The Land Beyond*, from *White Lotus Interactive*, 2017**

Signifier

The concept of affordance and how it can be applied to level design will be explained in more depth later. Affordance is defined as what an "object" can do after the user interacts with it, and what the user perceives it can do before interacting with it. A signifier helps to explain the affordance of the object.

We can use color to link objects with their use, the most clear example used in many games are healing items. Action games usually have a health bar, the color of this health bar in most cases is represented in red or green, an easy way of showing affordance is to make the items that heal the player the same color as the health bar, by doing that we are creating an easy to understand link between the two elements, once the player interacts with the healing item they will immediately link both of them together, creating affordance throughout the whole game.

Figure 11. **In this screenshot we can see how the item that heals the player shares the same color as the health bar, making it easy for the player to relate both elements. Image from Remnant: From the Ashes, by Gunfire Games, 2019**

Light

We can differentiate between 3 basic types of lights:

- **Ambient Light:** Ambient light illuminates all objects in the level, it does not come from a specific point of the scenario and it doesn't have a direction, ambient light will define the darkest points of our scenario, the higher the intensity of ambient light the brighter our darkest areas will be.
- **Directional Light**: Directional light tries to simulate sunlight, rays coming from the same direction, this will create shadows at a certain angle that will be uniform throughout the whole level or until this light is modified.
- **Spotlight:** A spotlight only throws rays at a limited angle and direction, a spotlight can be used to show a very noticeable focus on a certain object. Due to the nature of spotlights they can be used to move a player towards a specific direction. If we put a spotlight pointing to a point that can't currently be seen by the player, the player will move towards that point to see what the spotlight is pointing to.
- **Point Light/Omni light:** Point lights cast their rays evenly on all directions from their origin point. This type of light can be used to focus the attention of the player on one point, without being as intense as a spotlight.

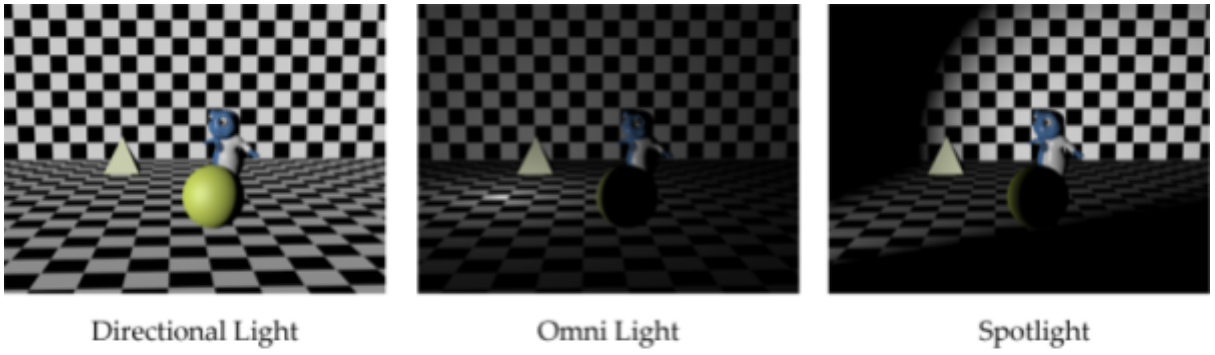

Figure 12. **Images showing each type of light and their behaviour. Image from *Build New Games* "*Introduction to Lighting in Games*, by *Chandler Prall*, 2012**

All kinds of light types have 2 basic properties, intensity and color/hue. By tweaking this 2 properties and the types of lights we use we can create a variety of situations that can help us guide the player in a level, the main technique we are going to use is contrast.

We can also try to create certain shapes and lines by using the shadow of the lights we place in our level, but this technique can be difficult to identify by the player unless they are paying a lot of attention to detail.

Contrast

Intensity: We can create contrast with the intensity of the light, in all levels we are going to have some kind of diffuse light that illuminates if just a little bit the environment, usually we are going to use an ambient light for this purpose.

If we are using a low intensity ambient light we can assume that areas that are not illuminated directly by other kind of lights will be hidden from the vision of the player. We can use this to hide secret areas throughout the level. The opposite effect can also be achieved, if our level is considered dark, we can highlight certain areas by illuminating them with an intensity higher than the average in our level.

A very common example is to illuminate the path we want the player to follow and leave the rest of the level much darker, the player will be attracted to well lit areas, and they won't we interested in darker zones if a brighter option is available.

Figure 13. **The level is almost pitch black, in this screenshot the only sources of light are the ones from the player companion, and from another point of the level. Image from *Ashen*, by *A44*, 2018**

Color: Light has a color property, it has a certain hue that is projected to whatever elements are affected by it, which means that we can apply techniques explained in the color section by using light.

Similarly to how we used intensity, the base we are going to work with is ambient light. Ambient light will create the most abundant color in our level, ambient light covers all

objects, so if this light has a blue hue, our level will have a colder aesthetic and textures in all objects will lean towards the ambient light color. We can again apply color contrast as explained in the color section, our color palette being mainly given by the ambient light and directional light, and using point lights and spot lights as the contrast points.

Motion

Motion is most effective when the player is in a mostly static environment. When something moves in an environment the player will move their focus towards that motion, this motion can take many forms, all of them get more effective if the rest of elements are static. We can distinguish 2 types of motions depending on their movement, we can distinguish between static and moving motions.

Static

Static motion points are mainly used to call the attention towards a certain specific point, this static motions are usually presented in the form of particles, objects being pushed by the wind, a door/window closing/opening, etc…

Figure 14. **Particles are used in a static scene to call the attention of the player to the door switch. Image from *Bioshock*, by *Irrational Games*, 2007**

Static motions can also be used as *breadcrumbs*, a technique that we will see later.

Moving

Moving motion is much more interesting and useful than static. Moving motions can take different forms and can have many uses, depending on our objective we can move this motions in different ways. This motions usually follow a pre-created path, after completing this path the motions will either disappear, loop, or switch to a new path. Here are some examples of ways we can use moving motion:

Loop: In an open world game it can be hard to call the attention of a player, a great way of using motion is to loop a circular motion in a high position where the player can see it from afar.
The classic application is to put a flock of birds, circling around the area we want the player to go. In exteriors the top/sky area is usually empty, meaning that every element we place there can be noticed with relative ease.

Path: Motions that follow a path are the most useful ones, as they can help the player quickly flow through the level, know which path to choose, or can create a very effective distraction. A lot of elements can be used as motion following a path, some of the most common examples are enemies, light particles, animals, other NPCs, etc…

Motion following a path is one of the best resources when we want to show the player where to go in open and closed spaces. On very open areas the level might seem to be huge, the player can easily get overwhelmed and get frustrated if they don't find their objective. Once the player enters the level, or has a good view of how the level is, we can use motion to draw a path towards the objective. For the element that will draw the motion we can apply color contrast techniques, which will help the player even more.

Figure 15. **Once the players starts running on the roof, the birds will start flying, following a path towards the area where the player has to go. Image from *Uncharted 3*, by *Naughty Dog*, 2011**

Composition

Composition techniques mostly come from the world of cinema, the player will be the one choosing how to move their character, but we are the ones designing the scenario, meaning that we can force certain perspectives and layers.

In cinema the concept of blocking can be defined in the way the director moves the actors in a scene, blocking includes all the preparation the scene needs and how it will develop. Blocking has 3 core elements: Space, Shapes, Lines

Space

The space is the area where the actors are placed, in our case, our actors will be the player character, and key elements of the environment. E.g: We will see landmarks in more depth later, they can be defined as key points that the player can easily see from different angles and can be used to estimate a rough position in the environment. The effectivity of a landmark is dependent on the whether or not the player sees it, by putting the landmark in certain positions surrounded by certain objects we can make the landmark easier to see.

We can split space in layers, in our case we are interested in the background, subject, and foreground.

- **Subject**: The subject of our composition is the element we are going to focus on, it has to be the center of the player's attention, and all the composition has to accentuate the existence of this subject. The subject will usually be either one object that we want to focus on (landmark, key items for the narrative/game, etc…), or the path we want the player to follow.
- **Background**: The background should never be the focus of the player, but we can use the background as lines and shapes to benefit the presence of the subject. Our background will be at a relatively large distance from the player, a way of making the background less noticable is putting a blur effect, or desaturating the colors, doing this will contrast with the other elements and it won't interfere with the other layers.
- **Foreground**: The foreground consist of the elements that are near the character, but are not the subject we want to focus on. The foreground can be used to frame the subject in a way that it is clearly the focus of the composition. The foreground will usually consist of the level's geometry, meaning that we can (among other techniques) funnels that direct thep layer to the subject. We can also use lines as we do in the background, and apply many other techniques explained in this guide.

Figure 16. **A composition where the pillars in the foreground are framing the subject which is the mountain, the background is barely visible and takes the shape of smaller pyramids. Image from *Journey*, by *Thatgamecompany*, 2012**

Shapes

We can distinguish 3 basic shapes in composition, they are not as effective as the use of Space and Lines, but there are certain circumstances where we will want to try to use one of them to condition certain responses or emotions from the player.

- **Square**: Squares can be used to limit a space, they are very useful to create a feeling of containment, we can use them to frame a certain part of the scene, allowing us to control what the player is seeing.

***Figure 17*. A square shaped area frames the point of interest which is the shrine and the character praying below it. Image from *Bloodborne*, by *From Software*, 2015**

- **Circles**: Circles give a higher sense of security, the lack of edges make them a less aggressive. Circles can be used in safe areas for our characters, if all our safe areas/checkpoints have a general round shape the player will be able to recognize them easily.
- **Triangles**: Triangles have a more aggressive shape, but we are mostly going to use them to accentuate important elements. Because triangles have an apex and a base, we are going to place the element we want to accentuate at the top, and everything else at the bottom. We have to avoid overcrowding the base or the shape won't work as well.

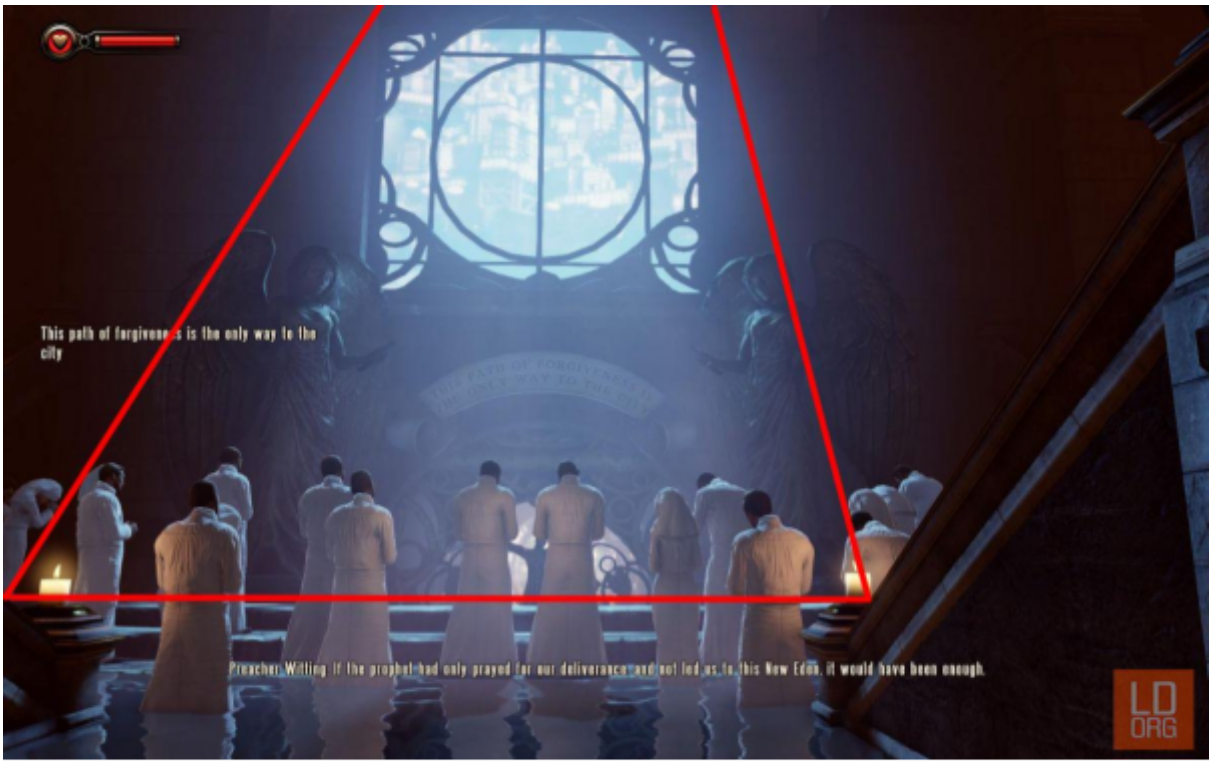

Figure 18. **Screenshot showing a triangle shape, focus the attention on the window where the city can be seen. This composition also fits the narrative of the game, symbolizing the ascension to heaven. Image from *Bioshock Infinite*, by *Irrational Games*, 2013**

All of this shapes are composed by lines, but not all lines need to create a shape.

Lines

Lines are the composition element we are going to use the most, lines can be used to guide the player's sight in whatever way we want. Lines can be created by pretty much anything, we are mostly going to use geometry, but you can even create lines with color contrast, lights and shadows, negative space, etc…

Lines have to be combined together with the subject to be most effective, we can use straight lines or curved lines, the first ones being the most effective as they are more easily processed by the player. Here are some examples of different lines compositions being used to either direct the attention to a certain element, or just to help follow a path.

Figure 19. **Composition where the shape of the room creates lines, these lines all point to the door at the end of the room, making it clear for the player which way they have to go. Image from *Alien: Colonial Marines*, by *Gearbox Software*, 2013**

Negative Space

There's one more composition trick that we can use to our advantage, negative space. As many of the other techniques negative space function is to guide the player's sight to the subject, negative space accomplishes this objective by isolating the subject.

We can isolate the target in various ways, the basic concept we have to keep in mind is that the subject has to be the only relevant thing in the composition, the objective of negative space is taking this to the extreme, removing everything we can from the rest of the composition. Here are some examples with the resources we've seen:

Light: If we want to use light to create negative space we will have an almost pitch black scene, with the subject being the only thing that's illuminated, in this case we care most about the shape and silhouette of the subject than about the color and texture.

Color: Extreme color contrast can also be used to create negative space, we are going to pick a color that either contrasts with the subject's color, or a low saturation color that will contrast with the high saturation of the subject. In this case we can use the color of the subject itself to create this contrast, but any high contrast combination will work perfectly.

Geometry: The absence of certain elements can also create contrast with the subject. This is specially useful for closed environments where our subject is not particularly different from other elements.

Figure 20. **In this screenshot we can see how negative space is used to make the colossus stand out from the rest of the scenario, the colossus is the only element that matters in the composition together with the player character, nothing else is distracting the player from it. Image from *Shadow of the Colossus*, by *Team ICO*, original 2005, remake 2018**

Here's an example: Imagine the player is in the middle of a room, this room has 3 doors that have the same color and shape,, but one of the doors has an inscription and seems to be damaged. The lack of elements on the other doors makes this one stand out over the rest, the player will be more interested in the door that looks used or damaged than on the ones that look new and barely used.

Breadcrumbs

The technique of Breadcrumbs consist of relating certain elements to create guides or paths that the player can identify and follow. Breadcrumbs are especially useful for linear levels, the player can easily identify them, so it's very easy to create an effective organic looking path.

We can use many elements as breadcrumbs, the main limit will be the mechanics of the game and how we can use them as breadcrumbs. There are more elements and techniques we can use as breadcrumbs, here are some of them, including some mechanic examples:

Color: Color is the technique that will give us the most flexibility. We are going to combine color with geometry and/or mechanics. In the case of breadcrumbs we have to pick one single color to use as such, more colors can get confusing for the players, but sticking to just one color will also create affordance in the player which we will be able to use at any point in the game.

Mechanics: Using mechanics as a resource for breadcrumbs is very dependant on the game. If our game features a climbing system, we can mark the climbable elements in a certain color, making them stand out from the rest of the elements in the level. Other elements like grapple points, coins, health packs, etc… Can be used to create a path towards the direction we want the player to go to.

Others: Anything can be used as a breadcrumb as long as the player can relate the existence of that element with the concept of a path or progress. One of the most used resources are enemies. In an action game if the player encounters an enemy it means that they are going the right way, we are usually not going to put enemies in a path that leads to nowhere unless we are specifically trying to do something special with that enemy, like making it stronger than the rest or protecting an item.

Figure 21. **In this screenshot enemies are being used as breadcrumbs to lead the player to the next section of the level, as the player advances more enemies will appear until they make it to the next area. Image from *Warhammer Vermintide II*, by *Fatshark*, 2018**

Figure 22. **As in the last image Enemies are also being used as breadcrumbs, in this case their objective is not to guide the player to the next area, but to show the players the possible paths they can follow. Image from *Warhammer Vermintide II*, by *Fatshark*, 2018**

Theme Park Design Techniques

When creating a level (specially open ones), we are creating environments where the players will be moving and interacting with what we create, we want the players to be immersed in the experience, we don't want them to check their map every few seconds because they forgot how to get to a specific area of the map. We also don't want them to not understand where they are, we need to give a cohesive narrative to the level itself, by doing this the player will more easily remember each area, and the need of UI won't be as big.

Theme park designers are experts on making immersive environments that also guide the player, in a theme park we want our customers to visit every section of the park, pass by as many shops as possible, and get on various rides. We are going to use 2 techniques from theme park design, this techniques are Landmarks, and Environment Narrative.

Landmarks

Landmarks are the key resources when creating open world maps, or when we want to maintain a cohesion throughout the whole game. Landmarks are very unique, usually big, and easy to identify objects that we are going to place in our levels.

The main purpose of a landmark is going to help the player find their relative position with the help of the landmark, meaning that without the need of a map, they can know more or less

in which point they are in the level. When using a landmark for this purpose we have to take into account that it will be seen from different angles, ideally we will avoid symmetry in the landmarks that are going to be seen from different angles, as having a non-symmetrical shape will also help the players identify in which direction they are moving in reference to the landmark.

Landmarks can also be used to give a general sense of purpose and direction to the player, if we don't have an open level we can still use landmarks to mark the objective of the player.

***Figure 23*. In both images the same landmark is used to guide the player towards that direction, we can see that the rock is visible from different points in the level and that it's closer on the second one. This does not only give the player a point of reference to follow, but also a sense of progression as the player gets closer to the rock. Images from *Uncharted 4*, by *Naughty Dog*, 2016**

Let's suppose that the objective of the player is to obtain a book that contains some secret knowledge, this book is hidden in a wizard's tower, but to get there the player has to go through a swamp. In this case we can have a closed and linear level, because it's a swamp we can cover some of the visibility the player has in all angles, our objective will be to create an environment that puts the player in tension, and a feeling of wanting to flee from this place but at the same time being a bit disoriented because it's a swamp. A great way of keeping all of this sensations and still give the player a sense of direction is to show the tower in the

distance, through the trees the tower might be seen, not the whole shape, but with every step the player gets closer and closer, avoiding obstacles in the way and always moving towards that direction.

Level Narrative

If we take a look at the map of any theme park we will see that they are divided in different areas, this areas are themed differently from each other, the rides in these areas are also themed, and each area usually has its own cast of characters who play a role in that area.

All of this elements put together create a narrative in each of these areas, so the visitors can emotionally connect with each of this places, this connection also creates expectations, if the visitors are in a Pirate themed area, there are certain things that they will be expecting, like pirate ships, treasures, skulls, maps, water, etc… This expectations make the visitors more engaged, they will actively look for all this elements. This can be directly applied to games that feature an open world, if each area is unique and has a clear theme the players will remember very clearly the area, they will be able to go back to it and move around it without the need of UI.

Most areas will also have a narrative built into them, in the case of theme parks the narrative is usually more open and doesn't follow a linear structure, but in our levels we can create a more linear narrative that allows us to show the player a sequence of events, easily calling their attention and sometimes just forcing them to move so the narrative can continue.

Affordance

As we saw earlier in the *Color* section, affordance can be defined as what a user perceives an object can do, and what the object actually does after the player interacts with it. Most of the time we will try to make the purpose of objects intuitive, unless we want to specifically confuse the player we will use the appropriate signifiers to help our users to identify the affordance of an object.

The players will learn and remember the affordance only once they have interacted with the object, even if they are quite certain than an object will do a specific action, they won't remember and assimilate this affordance until the interaction has finished and the players have seen what the object does.

To make affordance intuitive, we use signifiers. Signifiers are the characteristics and elements that we use to make the purpose of an object more clear to the player without the need of interacting with it first. We saw that we can use color as a signifier, by painting all our climbable geometry of a certain color that contrasts with the rest of the environment the

players will notice them first, thinking on the possibility of climbing them earlier than if they were just integrated with the rest of the level.

Here are some additional elements and techniques we can use to create affordance:

Shape: Shapes can be used in a similar way to color, we can associate certain mechanics, areas, paths, and more to shapes. We usually want to focus on very basic shapes, squares, circles, triangles, shapes that can be created with very simple lines that are easy to recognise. As with every affordance resource we have to establish a pattern that the player can recognise once the first interaction has been made, if we have started using pentagonal-shaped doors for our main boss fights, (which allow the player to keep progressing in the game) we shouldn't start using triangle shaped doors for the same types of bosses after the player has already defeated more of them, this will create a feeling of confusion and will make the players frustrated as the pattern they seemed to understand and recognise has suddenly changed.

Color: Color can be used in a lot of ways, we've already seen that it can be used to link mechanics to UI elements. We can also associate colors to certain elements of our levels, as an example we could associate safe areas/checkpoints with a light blue tone, this would allow the player to potentially see from afar where the checkpoint is without the need of a mini-map or arrow indicating where to go. Color use can be explored in many different ways, as other affordance resources creating a recognisable pattern is what will work best.

Figure 24. **Red objects are used to show the player the path they have to follow to go through the level. The same red color is used throughout the whole game. Image from *Mirror's Edge*, by *EA Digital Illusions CE*, 2009**

Geometry: When producing a game we cannot have an unlimited number of assets, we have to limit what can be produced for the release of the game, we will usually reuse a big part of the assets in all the levels. Reusing assets is not a bad thing, and we can use it to our

advantage to create affordance. If we always use the same doors for merchants, rocks to climb, check points pillars, and more, our player will quickly understand what can be expected of each of this elements, which will be easily recognizable at a quick glance.

Figure 25. **Dark Souls uses this particular bonfires as checkpoints, the immediate surroundings to the bonfire are safe zones, where enemies won't attack the player straight away. Because of their characteristics, bonfires can usually be seen from a distance. Image from *Dark Souls*, by *From Software*, 2009**

Mechanics: In any game the player will need to use the mechanics to progress through levels, no matter what type of game we are developing and what we want to focus on the level, the player will need to do certain actions to advance.

In tutorial levels we teach the players specific mechanics that can be used to interact with some specific elements, we are making sure that they've learned that mechanic, and that they know at least the basics of how it works. When we are sure that the player knows how the mechanic works, we are going to want to challenge our players in more depth, putting obstacles that are required to complete or progress through the level. If the player finds two different paths, one of them can be accessed by using one of the mechanics of the game, the other one doesn't require anything, the players will always suppose that the path that contains an obstacle is the right one, they are being challenged and they know the tools they have to overcome it.

By simply putting obstacles we are already showing the player what's the correct path they should follow, this can be applied to all kind of mechanics.

Sound

Sound is one of the most simple techniques to use. We can use spatial audio to make sure that the player can recognise the origin of a sound effect, depending on this sound the player will feel attracted, or they will try to move away from it.

Sound can be used to trick players intro traps, or to lead them to secret areas, if we have developed a very dark level we can try to focus more on the sound design so the players don't lose their sense of space and direction.

Playtest Sessions

Preparation and Tools

The first step to set up the playest session was preparing the tools required for the sessions. Going back to the Level Analysis section, there have been a few things that have required the use of certain software and tools to work on them. The main challenge was recording the videos of the levels and editing them.

Recording: In order to record the video of the level I've used OBS(Open Broadcaster Software). OBS is an app that allows to livestream, and record videos from a PC. To record Ashen the process was very straight forward, opening the game, loading the save file and start recording until the end.

To record Bloodborne the process was a bit more complex. In order to record video from a PS4 and get a usable video to a PC there are few options. The option that gets the best quality is using a capture card, that allows to record a video straight from the PS4's video feed, the problem with this is that good capture cards are expensive, and I've tried to avoid costs that are not essential. I ended up using PS4 Remote Play. Remote play allows to stream video straight from the PS4 to a PC inside the same network. Remote play allowed me to record video played in the console, directly from my PC with OBS.

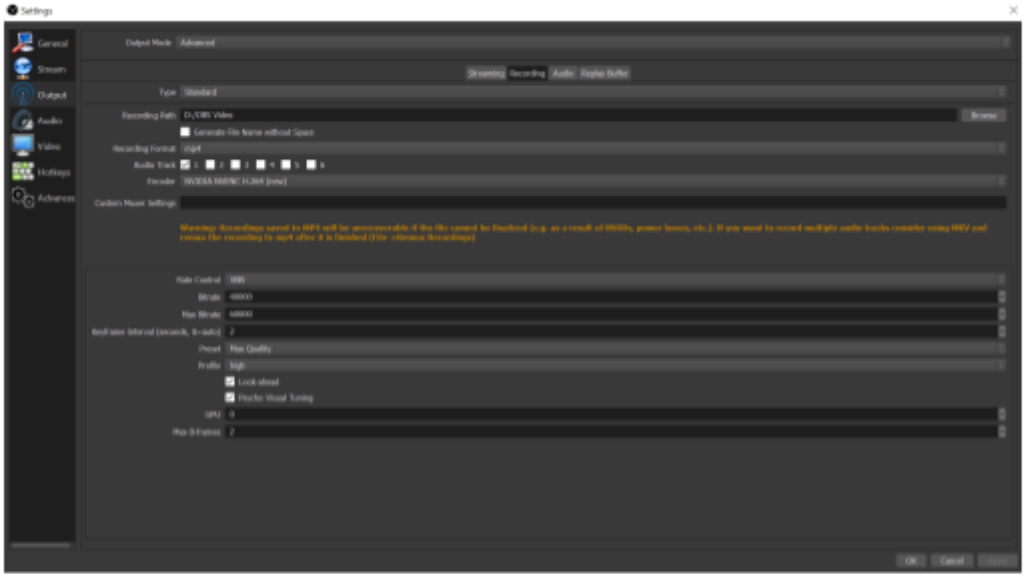

Figure 26. **Screenshots of the settings I used in OBS(Open Broadcaster Software) to record the analysed levels and sessions.**

Editing: The editing required for the videos is not very complex, so there's not a specific software that's naturally better suited for the purpose. I've chosen to edit the videos using Adobe After Effects, which I've used before and I'm already familiar with it's workflow.

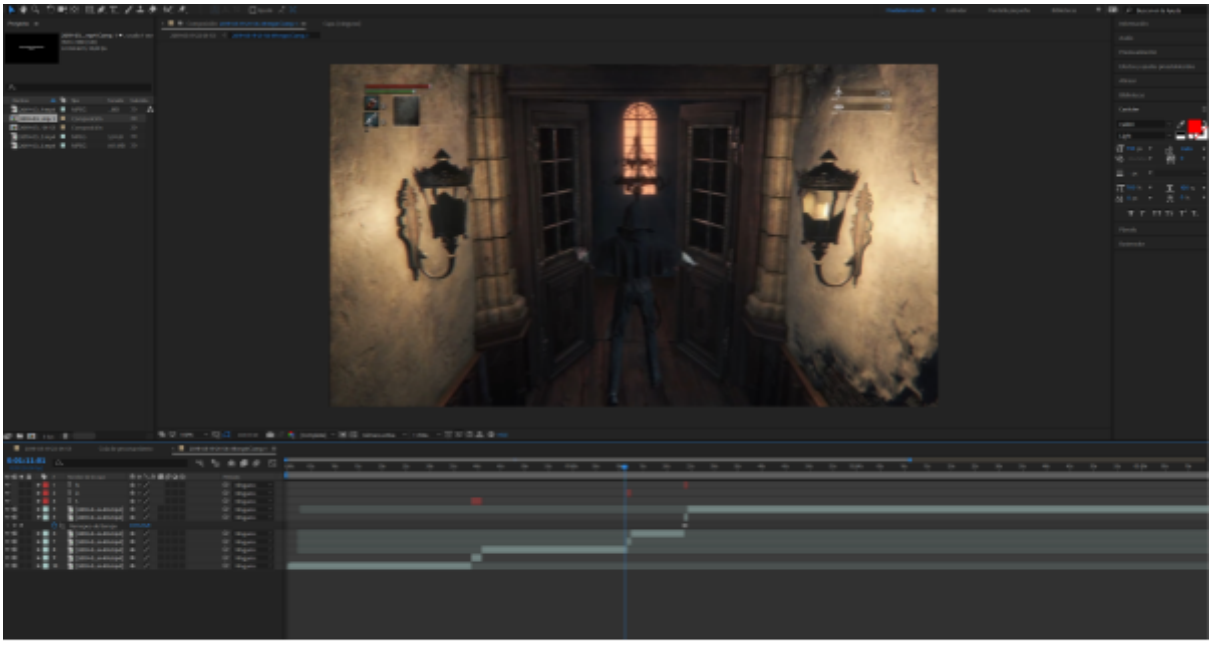

Figure 27. **Screenshot of the initial stages of the editing process of Bloodborne's level in *Adobe After Effects*.**

Games Preparation: One of the most essential parts of preparing the playtest sessions is creating an optimal way of testing the games is key to speeding up the sessions. The objectives of this preparation is that resetting the game to start another playtest can be done as quickly as possible, and that every tester plays the exact same part of the game so each test

happens under the same conditions. This preparation is different for both games because of the platforms and the level that's going to be tested for both of them:

Bloodborne: For Bloodborne the preparation is simple, because the chosen level is the tutorial, I do not need to modify the save files or to alter any in-game setting. Bloodborne features a character creator before starting the tutorial, to ensure that every test happens under the same conditions I've created a small guide so that the tester knows how to create a character and which options to choose, there's not a lot of combat in the tutorial, but this configuration should be optimal for every player no matter their previous knowledge about the game/genre. In order to start a new test it's as easy as going back to the main menu and creating a new character.

Ashen: Ashen also features a character creator but in this case the options are just visual. Because of the nature of the level that's going to be tested, I can't expect the players to play through the game until they get to where the analysed segment starts. Because Ashen's test is going to be performed on PC, I've extracted a save file that starts exactly where the segment begins, having this test files will allow to load the exact same situation for ever tester. Because in Ashen players won't be going through the tutorial, I've created a small guide with the controls, and with brief instructions of the objective.

Tracking

Another indispensable step of playtest sessions is tracking. I've defined a start and ending for the levels that are going to be tested, even if the games do not have a hard ending for them. When doing the playtest I will considered that a tester has ended the session once they reach the end point, or in the case of Ashen, which is a more open game, when the test goes for longer than a set time limit.

All sessions will be recorded so they can be analysed, they won't go through a process of editing, they will just be used as an additional source of data to extract the conclusions.

Questionnaire

The questionnaire will be the main source of data extracted from the playtest session, the questionnaire needs to be specific so that the data that is obtained is precise and usable, but it needs to give freedom in the answers, so that the questions don't condition their answer. Another important thing to consider is that not every player has the same experience with the genre, this will allow to obtain information about how experience affects the effectivity of some of the resources used to direct a player.

These have been the main objectives I've tried to accomplish when designing the questionnaire.

Games

Before studying the Playtest sessions, I am going to expose the main difference of the approach of both games to guiding the player, and more specifically focused on the analyzed levels. As mentioned before, both games share the same genre, but both of them have a different take on guiding the player.

Bloodborne

- The tested level is a tutorial. A tutorial level should introduce the basic mechanics of the game, tutorial levels are usually more linear and don't allow much choice from the player.
- The tutorial in Bloodborne has 3 phases:
    - The first phase is the very beginning of the game, the player has no real freedom of choice on what path to take, even though there's not much choice, the first phase still introduces some elements that will be used later in this tutorial.
    - The second phase begins after the first death, the player is introduced to the lobby. This lobby is used as a connection area between all the game areas, this zone is more open and doesn't have a clear exit.
    - The third phase begins once the player has returned to the tutorial level from the lobby. This third phase repeats a part of the first one, but now the player has the tools to keep going further. In this third phase the players will get a glimpse of levels that will be available later in the game, similarly to the other phases, there's only one way to advance, so there's no real choice of where the player will end.
- The linear nature of the first and third phases should be enough for every player to find a way of completing the level, but the level designers still applied a good amount of elements to give information to the player of where to go, and how the game mechanics work.
- Bloodborne doesn't have any non-diegetic elements that help the player navigate through the level, there's no help from the game User Interface(Map, Compass, Objective Marker, etc…), the level and NPC(Non player characters) dialogues are the only things that help with the navigation. Outside of navigation, there are text and messages that teach, for example, what button to press in order to do an attack, dodge, etc…

  This decision of not using UI elements to help with the navigation, can affect negatively the experience of the players if the elements used in the level are not enough to set a clear path.

Ashen

- The tested level is in the first area of the game after the tutorial, the playtest consist of completing one of the first quests, its objective is to reach the boss "dungeon" and kill the boss. Killing the boss is not relevant to the navigation which we are interested in,

so the playtest concludes once the player has reached the boss area, killed by it, and return to the dungeon. This repetition after being killed by the boss is to see if the players explore new paths or if they keep to the one they chose first.

- Ashen's level/mission can be divided into 4 phases.
    - I will consider the first phase the segment of the level from the spawn of the player, to the island where the "Boss Dungeon" can be found. This first phase is not linear, there are different paths that can take the player to the island. The standard path,the most common one, goes through a bridge with an enemy blocking it.
    - The second phase begins once the player reaches the island, there are 2 key locations on this island, the 1st one and the most important one is the entrance to the boss dungeon, this door is on the middle of the island and is where the compass guides the player to. The second one is a checkpoint, this checkpoint is specially useful as it's the one that's closest to the boss.
    - Third phase is the boss dungeon, it's mostly linear but it tricks the player into traps in some very interesting ways, using sound, shadows, and camera angles. This phase ends when the player reaches the boss room.
    - The fourth phase begins when the player respawns after being killed by the boss, in case some players don't die on the boss this phase will be skipped. This phase will be used to see if players choose a different path from the first one they followed or if they just followed the path they already know.
- Ashen's open world map can make orientation way more difficult. In case a player loses the way and doesn't get close to the objective in ~10min, the session will be cancelled and the result will be analyzed to detect what was the problem.
- Ashen features a compass at the top of the screen all the time, this compass marks important key-points like checkpoints and vendors, and it also marks the active quest objective. The game also features a map, with even more information than the compass and the exact location of the current mission objective. All of this information should help with navigation, but when compared to Bloodborne's level the open map of Ashen can be more confusing for inexperienced players.

Bloodborne Session Analysis

Objectives

The objectives of this analysis are the following:

- Verify if the previously done level analysis is correct, making sure that the elements that have been identified actually have an effect on the players.
- Get data on what are the most effective resources, which resources have caught the most attention of the testers.

- Identify the problems that might have been encountered within the level, or with any of the elements (or lack thereof) that are used to guide the player.

Tools

To run this sessions and to keep track of the data I've used the following tools:

- ***Google Forms:*** Google forms allowed me to build the questionnaire and branch it depending on the answers. *Google Forms* also represents graphs of some of the answers, which also helps to obtain objective data.
- ***After Effects:*** *After Effects* allows me to analyse in detail the recorded sessions in case I need to verify what the playtesters said in the questionnaire and what they actually did.

Analysis

Test Group

In the case of Bloodborne's test group, 62.5% of the participants had previous experience with games of the similar genre. This previous experience will condition certain behaviours of this players, games of the same genre share the most of the base mechanics related to combat and movement. These games also share similar equipment systems, as we will see when we check what issues the players encountered, inexperienced players had a lot of problems using the menus.

More experienced players moved in a more confident way throughout all the level and were paying more attention to details in the environment than the more inexperienced testers. Some of the inexperienced testers showed difficulties on certain parts of the level, we will see these in the issues section.

Non-Valid Sessions

Only one tester didn't complete the session on time(20min), the tester got stuck on the very final step of the level(Pulling a lever and climb a ladder), because this tester only failed to complete this final test their data will still be taken into consideration in this analysis.

Effective Resources

After each test, in the questionnaire, testers had to answer which resources helped them the most with navigation. In the case of Bloodborne all of the players had knowledge about level design concepts, which means that their answers were precise and detailed.

1. Light: The most mentioned resource was light. Light is used throughout all the level since the very first scene where the player can start moving. Light is mostly used as a

contrast to darkness, using negative space to guide the player to a specific point of the scenario. Negative space using light is used in every segment of the first phase of the level.

2. Doorways/Frames: Similarly to light, doorways are used throughout all the level. Doorways create a gate-like composition that attracts players, a doorway leads to a new area, meaning that whenever a doorway can be found if the player is looking for a path the doorway will be their objective.

***Figure 28*. The doorway is the only noticeable thing in this first room, it's the only illuminated element, and the arc acts as a frame for the door, incentivizing the player to enter. Image from *Bloodborne*, by *From Software*, 2015**

3. Enemies: In Bloodborne's tutorial enemies are placed in the areas where the player has to go, if there's an enemy it means that the player is on the right track. All testers found and defeated all enemies, including the ones that are setup as an ambush.
4. Sound: Very close to the mention of enemies, the testers also accentuated the importance of the sound. During the tutorial there are not a lot of sound cues that help with navigation, but they are used consistently for enemies and other elements such as the messengers (little skeletons that show messages to the player).
5. Negative Space: Negative space is harder to identify than the other resources, but it is used at the very beginning of the tutorial. Just as the player character is waking up they are in an almost pitch black room, the only shape that can be seen is an illuminated door.

Other Techniques

The testers were asked if they used any techniques from outside of the game to help them navigate the level. This techniques may includes things like the right-hand rule, or following a wall. In the case of bloodborne none of the testers used any of this techniques, the only worthwhile information was from a player that commented about prioritizing secondary paths once they knew which one was the main path.

Issues

During the sessions there were some problems with certain mechanics of the game that are not directly related to navigation, but do affect the experience within the level itself and block in some way the progress. The main issues the testers faced were the following:

1. UI and Menu controls: All the players that were not experienced in the genre had issues with the game's UI and Menu navigation.

   Throughout the whole game, Bloodborne teaches the player about the mechanics through gameplay and narrative, because the tutorial is the very first segment of the game the developers tried to give more information than usual, this information is displayed in the form of "Messengers". Messengers are tiny skeletons that surge from the ground, they can be found throughout the whole game, if the player interacts with one of this messengers a small window with some text will appear on the screen.

   The first messages that the player encounters in the tutorial explain the basic controls for the game (Attack button, Dodge, Heal, etc…), but they do not explain the mechanics themselves. They also show the controls for the menu, but they do not explain what the menu does, how to navigate it or how to do basic things through it.

   While avoiding to use an excessive amount of windows to show information to the player does increase inmersion, having a frustrated player that does not know how to do the very basic things in the game can have a very negative impact.

   Most of the players who had problems with the menus were frustrated with the game, after asking what they would do if this wasn't a playtest session most of them said that they would look for a tutorial online on how the menu works, specially how a weapon is equipped. A couple of testers said that they would just drop the game if they didn't have to finish the session, meaning that potential players would be lost.

   This approach to explaining the UI and controls clearly shows some problems, as developers we can't expect the player to watch a video online just to know how to use

the game menus. Avoiding windows and things that interrupt gameplay is a great way to immerse the player, but we always have to avoid frustration for basic things that are outside of the core experience of our game.

On From Software's latest game *Sekiro: Shadows Die Twice* windows are used more heavily during the tutorial, they do interrupt gameplay, but it's better to interrupt the tutorial than losing players that haven't been able to start playing the game because of things like UI.

There were no issues with other controls, the players who didn't read the messages tried to press different buttons until they discovered what each button did.

2. Lobby/Hub: The second biggest problem testers encountered was in the second phase of the level, the lobby/hub called *"Hunter's Dream"*. The *Hunter's Dream* works as a hub, it connects all the game areas and allows the player to teleport to any of them. After dying for the first time in the tutorial the players arrive to this hub, here they obtain weapons and receive some lines of dialogue, after the dialogue there's nothing else indicating the player what to do.

Figure 29. **This is the first thing the player sees after dying for the first time in the tutorial. This is the hub area, where the player will obtain their weapons and be able to go back to the tutorial area by interacting with one of the graves. Image from *Bloodborne*, by *From Software*, 2015**

The game doesn't mention at any point that this is a Hub, an instanced area to go back to the area where they died. This area is themed like a graveyard, there's a lot of symbolism throughout the whole area, in order to continue through the level, the player has to interact with one of the graves that exists in the hub. This grave is marked by messenger-like skeletons, but because of the color palette used in this hub,

and the other graves that look exactly the same, this can be missed very easily by the players. Similarly to the UI problem, this ends up creating a lot of frustration on the player, who will run around the whole Hub without knowing where to go. Again, there's no information in the tutorial that teaches the player how the hub works, this issue could be easily solved in a lot of ways (Light pointing at the grave, make the grave glow, dialogue that talks about the grave, scene that automates this action the first time, etc…).

3. Lever: This is a very similar issue to the graves one, but in this case it affected only one of the testers. Right before the end of the tutorial the player has to pull a lever, all testers except one noticed that this lever was there. The lever is at the very end of the level, there are enemies around the lever area so the vast majority of players found it without a problem, except one of the testers, who ran out of time for the session because he couldn't find how to continue. The same solutions used in the graves in the Hub can be applied, the issue is the same but in a different area.

UI Role

As I commented earlier, Bloodborne doesn't use it's UI to help with navigation, in the playtest sessions some issues came out that could've been easily solved by having UI elements point or explain certain mechanics or parts of the level. Of course, this would potentially reduce the level of immersion of the player, but that might be better than losing players to frustration.

Conclusion

The conclusion that can be extracted from Bloodborne is one that might seem very obvious, but it is often forgotten when developing a game, and specially when creating a level.

Having a niche target audience can be very helpful in terms of sales, and it can be great for developers to be able to assume that the players have a certain level of knowledge on the genre, but not only this niche should be able to play the game, when doing a tutorial the very basic things about the game should be explained, even the UI menus, which we often forget and always assume that the players already have experience with other games.

Unless our game has a very few number of input possibilities, the tutorial should always give as much information to the player as possible, unless we want to stay in a very small niche and assume that the players are familiar with the genre.

Bloodborne uses elements such as light and composition in fantastic ways, on both the first and third phase, none of the players got confused on which direction they had to follow, closed illuminated doors and big arcs that give way to other rooms help a lot in these stages.

Enemies and items also play a big role, from the very beginning an enemy is used to call the player's attention, the first time baiting the player into a trap, the second being one more obstacle that the player has to surpass to continue forward.

Ashen Session Analysis

Objectives

The objectives of this analysis are the following:

- Verify if the previously done level analysis is correct, making sure that the elements that have been identified actually have an effect on the players.
- Get data on what are the most effective resources, which resources have caught the most attention of the testers.
- Identify the problems that might have been encountered within the level, or with any of the elements (or lack thereof) that are used to guide the player.

Tools

To run this sessions and to keep track of the data I've used the following tools:

- ***Google Forms:*** Google forms allowed me to build the questionnaire and branch it depending on the answers. *Google Forms* also represents graphs of some of the answers, which also helps to obtain objective data.
- ***After Effects:*** *After Effects* allows me to analyse in detail the recorded sessions in case I need to verify what the playtesters said in the questionnaire and what they actually did.

Analysis

Test Group

70% of the testers had some previous experience with similar games, just as in the case of *Bloodborne* this experience will affect how the players approach the level. More experienced players will be more confident while more inexperienced testers will be more wary when facing challenges and exploring.

Some testers previously played Bloodborne's tutorial, this made some of the testers pick up some of the movement and combat controls much faster than the inexperienced players.

Non-Valid sessions

There were no non-valid sessions in Ashen's sessions, all the players arrived to the boss area.

Effective Resources

1. UI Compass: Over everything else the testers emphasized the importance of the compass found at the top of the screen. The compass is not part of the level, so we can't consider it one of the resources that we can apply while designing it. The compass in Ashen points to the current mission objective, this obviously helps the players immensely, even if they do not see a clear path, the do know the general direction they have to move towards to. Every tester put this at the top of their list of helpful guiding elements.

2. NPC Shadow: Once the player reaches the dungeon where the boss is, a shadow-like figure appears, this shadow starts moving through the dungeon, guiding the player through a path that will get them to the boss. In the middle part of the dungeon this shadow also shows the player a mechanic that will be used later in the boss.

   This resource is based on movement, players will usually try to follow objects that are moving, first with sight, and then with the character they are controlling if it's possible to reach the moving object.

Figure 30. **At the end of the hallway the NPC shadow can be seen, as the player gets closer the shadow will start moving and interacting with the environment to teach one of the mechanics of the boss at the end of this dungeon. Image from *Ashen*, by *A44*, 2018**

3. Paths in the environment: Starting from the spawn point where the session begins, the players can already see paths that go towards different directions. This paths are marked with stones, wooden planks and rocks. The paths are not continuous, they break between sections so the level doesn't feel artificial, but their purpose and effectivity remains the same, once the player sees a stone path that slowly curves and continues up to a bridge, the player will reach that bridge.

Figure 31. **A path made of wood planks and stone slabs guides the player towards the objective of the quest. Image from *Ashen*, by *A44*, 2018**

This resource can be a bit tricky to identify for the players and testers, usually paths are "hidden" so they don't look very obvious and take the player away from the immersion, they are supposed to work in a subconscious space guiding the player without them even knowing it. Paths can also be created by using a composition where we clearly distinguish the background and foreground from the object, in this case the object would be the path we want the player to follow, putting simple walls or geometry that blocks the player vision will make the path stand out more.

4. Landmarks: In this level/part of the map there are 2 major landmarks:
   The first one is a huge trunk-like stone that reaches to the sky, this stone can be seen from any part of the map, letting the player quickly orient themselves and know which direction they are facing.
   The second landmark are stone mountains, in this case they have 2 functions, the first function is to catch the player's attention so they move towards them, the dungeon is below this mountain. The second function is a bit more subtle, Ashen has an

open-world map, which means that the player can explore with a great degree of freedom, this mountains are pointing towards the direction the player needs to go to reach the next area. The player might not consciously notice this, but the mountains act as a giant arrow pointing to the next big goal.

5. Light: Finally we have light. In the open world segment of the level light doesn't play a particularly important role, but light and darkness are the main resources used in the dungeon. Light is used to indicate the main path, which is brighter when compared to the secondary passages where the players can go and explore.

   Light is also used to trick players into traps, using the shadows of certain enemies to create interesting silhouettes. The lack of light is also used in this dungeon, forcing the player to use their lamp instead of a shield, which creates a higher sense of danger and awareness, the player is in constant tension and can be easily taken off guard.

Other Techniques

The testers were asked if they used any techniques from outside of the game to help them navigate the level. This techniques may includes things like the right-hand rule, or following a wall.

None of the testers used any particular technique, but one of them decided to try to walk a straight path towards the quest objective, which led this player to die in the river before reaching the dungeon entrance. After this the player looked for a regular path and reached the dungeon by going across the bridge.

Issues

1. UI: Ironically the most useful feature that helped with navigation is also the one that brought more problems. The testers understood perfectly the objective of the compass, it points to the quest objective, the problem was that there was more than one accepted quest, but only one quest was selected as the active one (the quest that led to the boss dungeon). Even though the main quest marker was bigger and had a yellow color, some players ended up going in the direction of the secondary quest. This players felt lost until they arrived to the quest objective and noticed that that wasn't the quest they were doing, most of them checked the markers again and turned back towards the correct quest…. One of the testers kept exploring for a while, but they turned back and arrived at the boss dungeon on time.

2. Door: The second and last issue was the door. To enter the dungeon the players need to open a door together with the AI companion. Some testers didn't notice that they

could interact with the door, the door has 2 marked positions where the player can start interacting with it, it's marked by using a dust-like particle effect that flows from the door to the floor.

These particles were enough for most testers, but 2 of them didn't notice that they could open the door, these players kept exploring the surrounding area, and they finally opened the door as the quest marker still pointed at it.

UI Role

Ashen's UI is the main pillar of the navigation, the developers used other resources outside of the UI, but the game features a Compass and a Map, once the player has learned how to use this navigation elements it's very difficult that they get lost, and even if they did, the developers can still use all the additional resources available to show the player exactly where they need to go.

Conclusion

Because of the open-world nature of Ashen it's more difficult to use certain resources that are effective in more closed maps, the game uses this additional resources in the dungeon section which is more closed and controlled.

To guide the player through the open world part, the UI is the element that plays the most important role, the player constantly has a compass that shows which way to go, even if the player were to get lost, they can always open the map and see the exact location where they are and where their objective is.

To avoid using UI for navigation even in open-world spaces, techniques from theme park design could be applied, this techniques lean a lot of landmarks, and clearly differentiating each area of the map. This techniques could be applied as a replacement of the UI, they would still underperform when compared to the effectiveness of using UI, but the game's atmosphere would be transmitted in a much stronger way. This techniques could still be applied without replacing the UI, which would reduce the times where the player needs to open the map to check where they are and where they are going.

Comparison

Levels and Applications

The levels of both games are very different from each other. Bloodborne has a more railroaded level, even if the players tried to find a different path the goal would be the same, and sooner or later the players would get there. Ashen on the other hand features and open world map, so even if the quest used for the session has a clearly marked location, the player can reach that location through various points, and the biggest difference, the player can get lost.

Because of this difference between the levels the use of certain resources in Bloodborne is more controlled, the level designers know exactly where the player will go through and what they will see, level designers in Ashen were much more limited on what resources they could use, as they had to consider all the main and secondary quests that exist in the game.

Bloodborne focuses on establishing some resources that will be used throughout the whole game, the use of light, the sound of enemies, closed locked doors that lead to other areas, messengers and lamps. All of this resources will be used during the whole game, and most of them are established in the tutorial.

Ashen leans most of the weight on the UI, the game features a compass that constantly points at the currently active quest objective, which means that as long as the player is following that objective they will arrive there at some point. This doesn't mean that other resources in the lever aren't useful, but the UI takes away a lot of the weight of the other elements.

Outside of the UI, Ashen uses composition in an excellent way to create paths that the player can easily recognize and follow.

Right before the dungeon and inside the dungeon, motion is used, on the first case a deer-like creature flees from the player guiding them to a checkpoint. Inside the dungeon an NPC shadow appears, it goes straight down, to where the boss is.

Problems

On both games the main problems are related to the UI or subsystems derived from the UI.

On Bloodborne we saw that the lack of information given to the player made so that some of the testers got stuck in the mid phase simply because they didn't know that they could

teleport to another area by interacting with a grave, players also had issues with the equipment menu to equip their weapons.

On Ashen the problem with UI is that because the players are so focused on it, they didn't notice that they were going to a different objective than the active one, and only once they reached the location they noticed that they were not if the active quest objective.

Improvement Possibilities

Bloodborne

The main problem with Bloodborne is the lack of information given at the beginning of the game. Generally it's better to show the basic information to the player very early in the game, in the tutorial. By showing the information during the tutorial we will avoid interrupting gameplay when the player is more invested in the experience, this doesn't mean that we can throw the player all of the information they need at once. Forcing the player to use mechanics to advance will help a lot with the learning process, here's an example of how this information could be showed.

1. The player can start moving in the first tutorial room.
2. Right before the door that continues to the next room there's a messenger, the player will be forced to interact with it before being able to open the door. Once the player presses the interact button (showed on screen), a window will appear explaining what messengers do, after that the messenger message will appear telling the player that they can open the door by pressing the same interact button.
3. The player arrives at the next room, there are a few messengers here explaining some basic controls, the player already knows what messengers are, so they can interact with them and read their messages.
4. The player continues, gets killed by the first enemy, and appears in the second phase of the tutorial, the Hunter's Dream (Hub area). The player picks up the weapons (given by messengers), once the weapons have been picked up a window will appear teaching the player how to equip them, showing the controls to open the menu, and briefly explaining each equipment slot (Main hand, Secondary Hand, Top, Chest, Pants, Feet).
5. With the weapons equip the player will open the big door in front of them and will talk to German, the first friendly NPC the player meets, after the conversation where German talks about the Hunter's Dream, a window should appear explaining the purpose of Hunter's Dream (connecting other areas and allowing the player to teleport by using the graves, show a picture of the grave the player has to use right now).
6. Because the player has already passed the grave they know where it is.

This would solve the main problems that Bloodborne show, and players would get way less frustrated than they did for not being able to do very basic things. This will interrupt a bit more the game in the tutorial phase, which is a good tradeoff to avoid problems later on.

Ashen

As mentioned before, the main problem that Ashen has is that it focuses so much on the UI that it overpowers everything else, making other resources not relevant thus reducing their effectivity. We have also seen that having UI makes the players less prone to getting lost, so while trying to empower other resources we have to avoid losing the existing overall effectivity. Here are some improvements that could reduce the UI elements and empower the use of level resources:

1. Limit the use of the UI navigation elements: Before we can focus on improving the level elements, we have to tone down the UI elements that are moving the focus away from the level. The main UI element that shows this problem is the compass that is constantly at the top of the screen.

   By putting the compass at the top of the screen the players are constantly looking at it, there's no real way of getting lost as players will eventually reach one objective or the other. The compass is a resource that is too powerful and it currently removes a lot of the exploration aspect of the game, removing it completely could be a possibility, but it will bring other problems and narrow the game's target audience, so a limitation would work better than just removing it.

   This limit can have different natures, the simplest one would be to put a cooldown on the compass use, this cooldown would limit the time when the compass can be enabled, the compass could stay on screen for 2 or 3 seconds and have a cooldown of 1 minute. This would still give the players a general direction of where they have to go, but while the compass is on cooldown they would depend exclusively on the environment to find their way to the objective.

   Even with this system some players may still want to have the option of having the compass always at the top, this could be an option in the accessibility settings, or implemented as a Talisman. Talismans are items that the player can equip that give passive effects to the character, because their effects are passive, a talisman that permanently showed the compass at the top would fit the already established rules for talismans.

2. Apply theme park design elements: Because Ashen uses an open world approach there are a lot of theme park design techniques that can be used, I am going to focus on ones that can be applied without changing the core parts of the level.

   The first technique that can be applied is environmental storytelling. The player character is not the first person to go through this world, so even if mechanically the inhabitants of the world are only used as enemies or NPCs you can talk to, this people live in this world, this people and creatures should have been interacting with the world around them. We don't necessarily need this creatures no interact with the world while we are playing, that would mean a lot of new animations, dialogues, etc… But we need to see the history of this people through the level, this can be done in various ways, Ashen usually puts enemies around campfires, or sitting together around some particular point of interest, but these are isolated zones that don't have any relation with each other, this makes them feel like we are moving from encounter to encounter facing a singular challenge each time we approach one of this small areas. One way to connect all of this areas is to create a narrative arround it and place elements in the level to explain that narrative. The enemies seem to be part of at tribe, a central area could be constructed where this tribe people live, they probably get water in the river, so place some jars and an NPC around the water, picking up water of the river with an empty jar, someone will need to transport those jars, another character that is carrying a full jar can be placed between the river and the central tribe area. If we want to avoid doing some new animations or technology that might be required for this, we can use breadcrumbs to tell the story. Breadcrumbs can be represented in the way of notes, this notes can explain the story of the area, and their most important feature, they can be seen from a medium to short distance, which means that the players will be attracted to them.

   Ashen splits the level in different areas differentiated by geographical elements, "Wandering Lake" is one of them, the issue with this kind of areas is that we can't clearly differentiate them from afar, here we can introduce a second technique that is used a lot in theme park design, landmarks. When we use landmarks we have to make them noticeable from a distance, and unique, both this features will make sure that the player sees and remembers this point of interest we have created. Ashen has one great landmark that can be seen from the beginning of the game, this great white rock/bone tower can be seen from any point in the level, because we cannot get to it this can only be used as an orientation point to know which direction we are looking at. In the analyzed level one of the better landmarks we can create is one near the dungeon area. There are huge rocks at the back of the dungeon, this rocks could be modified to stand out more, if we try to follow the theme of the dungeon one of this rocks could be textured black, this would make it stand out more from the rest of the rocky mountains that can be seen throughout the level. A lot more landmarks could be

implemented, but if we want to improve the navigation towards that area modifying the existing generic rocks would work well.

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